Catalogue of American Amphibians and Reptiles.

NELSON, CRAIG E. 1972. *Gastrophryne elegans.*

Gastrophryne elegans (Boulenger)
Elegant narrow-mouthed toad

Engystoma carolinense (part): Günther 1859:51–52.
Engystoma elegans Boulenger, 1882:162. Type-locality "Cordoba" Veracruz, Mexico. Holotype by museum records British Museum (Nat. Hist.) 56.4.17.27 (reregister 1947.2.11.86), (not seen by author), collected by Sallé.
Engystoma ustum: Gadow, 1905:194, 208.
Gastrophryne elegans: Stejneger, 1910:166.
Microhyla elegans: Parker, 1934:126, 144.
Microhyla usta usta: Reese and Firschein, 1950:53.

• CONTENT. The species is monotypic.

• DEFINITION AND DIAGNOSIS. *Gastrophryne elegans* differs from *G. pictiventris* in coloration and from other species in foot structure and coloration. The ventral coloration consists of dark brown or black background mostly obscured by irregular white spots which are separated by much less than their own diameter and are often partially fused with adjacent spots. A dark brown inguinal spot is present above a more or less distinct dark brown lateral band which passes from the tip of the snout through the eye and above the shoulder to the groin and anterior face of the thigh (sometimes stopping between the axilla and groin). The diagnostic features of the hind foot are: a single metatarsal tubercle, rudimentary webs (extending approximately to the proximal joint of the fourth toe), and the tips of the outer toes flattened dorsoventrally and slightly dilated laterally.

• DESCRIPTIONS. The best descriptions of adults are by Boulenger (1882 [type]; type is also described, as a unique *G. carolinensis*, by Günther, 1859, and Brocchi, 1882), Parker (1934), Taylor (1940), and Reese (1953; confuses digital structure). Additional descriptions are in Nieden (1926), Kellogg (1932), Gaige (in Stuart, 1934), Smith (1938), Taylor and Smith (1945), Smith and Taylor (1948, in key) and Nelson (ms.). Nelson and Altig (ms.) describe the tadpole. No eggs are known. Nelson (ms.) describes the mating call.

The lateral dark band (see diagnosis) is incomplete in some specimens. It usually has a light dorsal margin. The dorsum has dark lines outlining an irregular inverted V which widens at the level of the eyes, at mid-body and at the level of the groin, and narrows between these three areas (this pattern is sometimes absent). Two dark lines cross the lower leg. There are often traces of lines on the thigh and foot which align with those of the lower leg in sitting position. Snout-coccyx length in adult males ranges from 21.3 to 25.8 mm. and in adult females from 26.2 to 28.9 mm. (Nelson, ms.). Webs are rudimentary and occasionally absent (Taylor, 1940; Dunn, Trapido, and Evans, 1948).

• ILLUSTRATIONS. Günther (1900:pl. 62) provides drawings of an adult. Nelson (1966) provides photographs of adults and presents an audiospectrogram from the series of calls illustrated herein. Nelson and Altig (ms.) figure a tadpole.

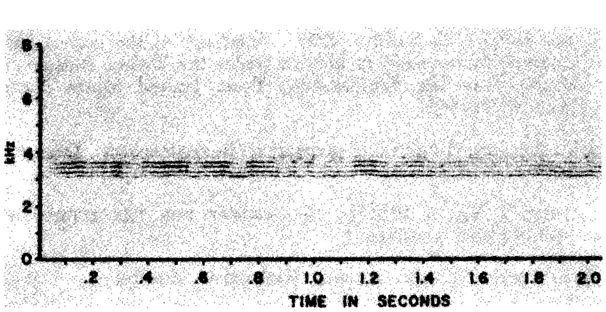
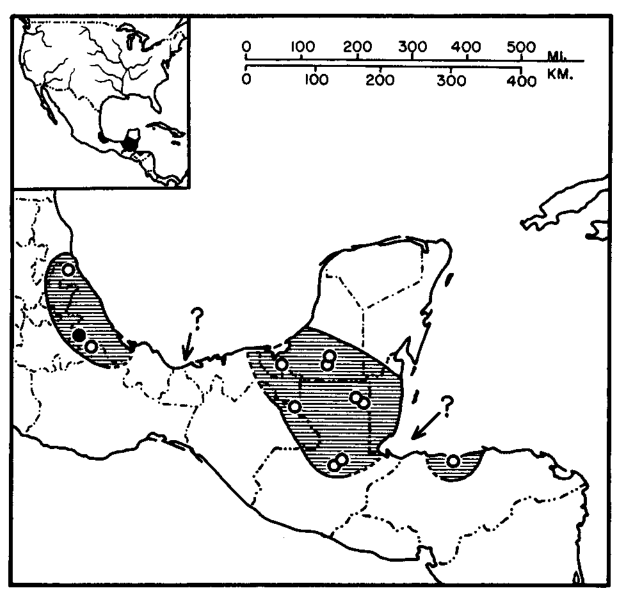


FIGURE 1. Audiospectrogram (narrow band, 45 Hz) of mating call of *Gastrophryne elegans*: Sebol, Alta Verapaz, Guatemala, 8 July 1964, water 24°C. (recording by C. E. and S. L. Nelson in the Univ. Texas Bioacoustical Library).

• DISTRIBUTION. *G. elegans* occurs at elevations to 924 m. on Gulf of Mexico and Caribbean versants from Veracruz, Mexico, to Honduras. Records are: in *Veracruz, México*: 6 mi. northwest of Tihuatlán (Reese, 1953), Córdoba at 924 m. (Boulenger, 1882), Presidio at 1500 ft. (Gadow, 1905, as *G. usta*; Parker, 1934), ? Motzorongo (Gadow 1905, as *G. usta*; see Nelson, ms.) and ? 2.3 km. east of Tolumé (Nelson and Altig, ms.); in *Campeche, México*: 20 km. north of Xpujil (Duellman, 1965, as Xpujil), Becan (Smith, 1938), and Tres Brazos (Smith, 1938); in *El Petén, Guatemala*: Pozada de Jicotea at 5 mi. south of Piedras Negras (Taylor and Smith, 1945), Tikal (Stuart, 1958, 1961), near Yaxha (Nelson, ms.), 12 mi. east of Yaxha (Stuart, 1934); in *Alta Verapaz, Guatemala*: 8.2 mi. south of Sebol (Nelson, in press), and 28.3 km. northeast of Campur at 260 m. (Duellman, 1963); and in *Atlantida, Honduras*: about 15 km. east of La Ceiba at Corozal (Nelson, ms.).

• FOSSIL RECORD. None.

• PERTINENT LITERATURE. Nelson (1966) provides a full synonymy. Breeding males have median, subgular vocal pouches, dark throats, nuptial glands, and spicules on the lateral fringes of the toes (Smith and Taylor, 1945; Nelson, in press). Females average larger than males and some breeding females have perianal pustules (Nelson, ms.). The pharyngeal folds are crenulate in some specimens (Parker, 1927) and smooth in others (Nelson, ms.). *G. elegans* is known from areas characterized as secondary forest, quasi-rainforest and rainforest (Gadow, 1905; Reese, 1953; Stuart, 1958; Duellman, 1965; Nelson, ms.). Stuart (1961) mentions that tadpoles frequent shallow pond margins. Duellman (1963) characterized the species as fossorial; litter living might be more descriptive. Nelson (ms.) describes the diet (ants), calling position, breeding dates (June–Aug.), call (fundamental, 200 Hz.; dominant, 2800–3300 Hz.; and duration, 4.0 and 5.0 seconds at 25°C), and habitat. Dr. Jack Meyer (personal communication) removed the Honduranian specimen from the stomach of a snake (*Drymobius margaritiferus*). Other specimens have been collected from forest trails (Reese, 1953; Stuart, 1958), from submerged grass roots in a swamp (Duellman, 1965) and from breeding choruses (Stuart 1934; Nelson, ms.). Barrera (1963) mentions this species in discussing the Yucatan Peninsula Biotic Province. Dunn (1949) mentions "slight webbing." Gaige (in Stuart, 1934), Dunn, Trapido and Evans (1948) and Nelson (ms.) compare *G. elegans* and *G. pictiventris* and note the close affinity between these two species. Noble (1931:537) notes a resemblance between *G. elegans* and



MAP. The solid symbol marks the type-locality; open symbols indicate other localities. Occurrence of the species in the areas indicated by question marks is uncertain.

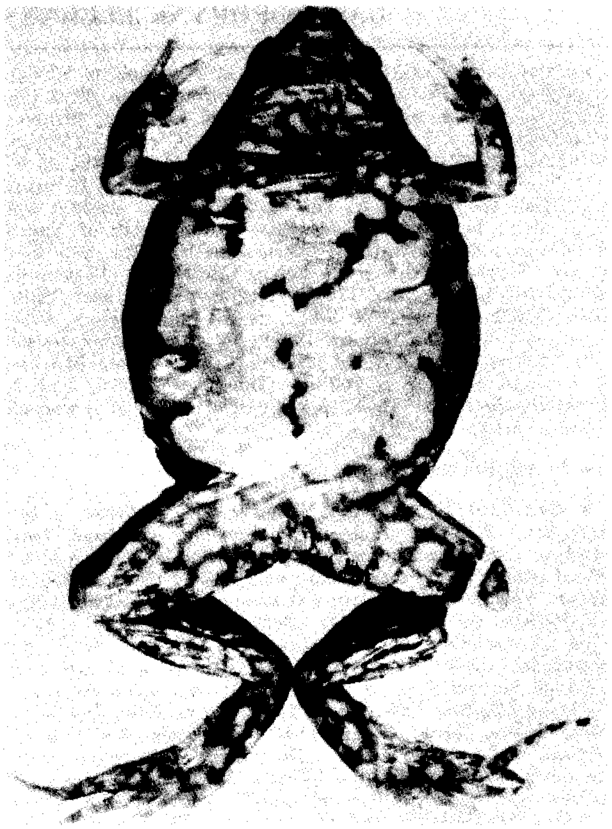


FIGURE 2. *Gastrophryne elegans* (ventral view): Univ. Kansas Mus. Nat. Hist. no. 65322, female, 28.3 km NE Campur, Alta Verapaz, Guatemala, 260 m.

Microhyla rubra of Ceylon. Carvalho (1954) mentions *G. elegans* in discussing the genus. Reese (1953) compares *G. elegans*, *G. usta* and *G. olivacea*. Schmidt (1941) mentions that *G. elegans* is known from Guatemala but not British Honduras. Smith and Taylor (1950) cite the type locality. The present paper is believed to cite all substantive discussions of this species (excepting only citations of the name either alone or with generalized region of occurrence).

• ETYMOLOGY. The Latin word *elegans* means fine or elegant and presumably refers to the unusual beauty (for a microhylid) of the coloration of this species. The vernacular name used herein is an English rendition of the specific name.

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C. E. NELSON, INDIANA UNIVERSITY, BLOOMINGTON, INDIANA 47401.

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